

EXHIBIT A

Date Prepared: March 1, 2007

Curriculum Vitae

Name & Title: **Herman Ford Staats, Ph.D.**
Associate Professor in Pathology (with tenure)
Associate Professor of Immunology
Associate Professor of Medicine

Address: Department of Pathology
Box 3712 (regular mail)
Davison Building, Room 346 (FedEx)
Duke University Medical Center (DUMC)
Durham, NC 27710
Tel: 919-684-8823
Fax: 919-685-5627
E-mail: hfs@duke.edu

Personal

Place: Dover, Delaware
Citizen: United States

Education:

1979-83 Sussex Central High School, Georgetown, DE
1984-88 BS Salisbury University, Salisbury, MD (Bachelor of Science in Medical Technology)
1988-92 PhD University of South Alabama, Mobile, AL
Doctor of Philosophy in Basic Medical Sciences (Microbiology and Immunology)

Professional Training:

Post-Doctoral Research Training:

1992-93 Univ. of Alabama at Birmingham; NIH Training Grant Postdoctoral Fellow; Mucosal Immunology
1993-95 Duke University Medical Center; NIH Training Grant Postdoctoral Fellow; Mucosal HIV Vaccines
1995-96 Duke University Medical Center; Research Associate; Mucosal HIV Vaccines

Clinical & Academic Career:

University Appointments:

1996 – 03 Assistant Research Professor, Departments of Medicine and Immunology, DUMC (non-tenure track)
1999 – 03 Assistant Research Professor, Department of Pathology, DUMC (non-tenure track)
2003 – 5/2006 Assistant Professor in Pathology (DUMC; tenure track)
Assistant Professor of Immunology (DUMC)
Assistant Professor in Medicine (DUMC)
5/2006- 8/2006 Associate Professor in Pathology (with tenure, DUMC)
Assistant Professor of Immunology (DUMC)
Assistant Professor in Medicine (DUMC)
8/2006- Present Associate Professor in Pathology (with tenure, DUMC)
Associate Professor of Immunology (DUMC)
Assistant Professor in Medicine (DUMC)
1/2007 - Present Associate Professor in Pathology (with tenure, DUMC)
Associate Professor of Immunology (DUMC)
Associate Professor of Medicine (DUMC)

Other Professional Positions & Major Visiting Appointments:

- 2000 – 02 Adjunct Assistant Professor, Dept. of Microbiology, Parasitology and Pathology
North Carolina State University, College of Veterinary Medicine, Raleigh, NC (Dept dissolved in 2002)
- 1/2006-Present Assistant Professor, Department of Population Health and Pathobiology (College of Veterinary Medicine,
Department of Population Health and Pathobiology, North Carolina State University)

Consultant Appointments

- 2000 – 01: Consultant for vaccine adjuvant technology, Fort Dodge Animal Health, Fort Dodge, Iowa.

Licensure & Certifications:

- 1988 Medical Technologist (MT), American Society of Clinical Pathologists (ASCP)

Professional Awards & Special Recognitions

Awards & Honors:

- 1998 Davison Award for Teaching, Duke University School of Medicine
- 1998 Henry N. Neufeld Memorial Award (given by the United States – Israel Binational Science Foundation to the most outstanding and original BSF supported project in the health sciences)

Editorial Boards:

- 1996 – 2004 Editorial Board, AIDS Research and Human Retroviruses
- 1997 – 99 Editorial Board, Infection and Immunity
- 2000 – 2004 Associate Editor, Journal of Immunology
- 2001- Present Editorial Board, Current HIV Research
- 2006 – Present Section Editor, Journal of Immunology

Peer Reviewer:

- 1993 – 96 Ad hoc reviewer, Infection and Immunity
- 1996 – Present Ad hoc reviewer, Vaccine
- 1996 – Present Ad hoc reviewer, Journal of Virology
- 1997 – 2000 Ad hoc reviewer, Journal of Immunology
- 2004 – June 2006 Ad hoc reviewer, Journal of Immunology
- 1997 – Present Ad hoc reviewer, Journal of Infectious Diseases
- 1998 – Present Ad hoc reviewer, Cellular Immunology
- 1999 – Present Ad hoc reviewer, Emerging Infectious Diseases
- 2000 Ad hoc reviewer, Nature Medicine
- 2005 Ad hoc reviewer, Journal of Pharmaceutical Sciences

Organizations & Participation

Memberships, Offices & Committee Assignments in Professional Societies:

- 1986 – Present member, American Society for Microbiology
- 1995 – Present member, Society for Mucosal Immunology
- 1997 – Present member, American Association of Immunologists

Other Professional Positions Nationally & Major Visiting Appointments:

- 2000 – 05 Member, Morehouse School of Medicine External Advisory Committee for Research Center for Minority-Institutional Grant.

University Services

Before Duke

- 1991-92 President, Basic Sciences Graduate Student Organization, College of Medicine, University of South Alabama, Mobile, AL
- 1990-91 Graduate Student Representative to the Graduate Admissions Committee, College of Medicine, University of South Alabama, Mobile, AL

Duke University & Duke Health Care System

2003-Present	Department of Pathology, Cellular and Molecular Biology training program admissions committee
2003-Present	Department of Pathology graduate program admissions committee
2004-Present	Department of Pathology representative to the Basic Sciences Faculty Steering Committee
2006-Present	Department of Pathology, Alternate to Institutional Animal Care and Use Committee

Other services**Grant Review:**National Institutes of Health ad hoc grant/contract review:

1998	Participant, "Design of phase I/II gonorrhea vaccine trials" Workshop, NIAID, NIH
2000	Member, NIH NIAID Study Section, RFA AI-99-011, "Innovative Research In Human Mucosal Immunity"
2001 – 04	Member, NIH Center for Scientific Review Special Emphasis Panel Study Section, Council ZRG1 SSS-F 01, Innate Immunity and Host Defense.
2003	Member, ZRG1 BM-2 90 S, Bacterial Pathogenesis and Biodefense Study Section
2003	ZRG1 SSS-F 05 S, Immunity in Biodefense Study Section
2004	Member ZAI1 PA-1 contract review team; Innate Immune Receptors and Adjuvant Discovery
2004	Member ZRG1 IMM-F 06 S Study Section; Topics in Gut and Brain Innate Immunity
2004	Member, AARR-C 02 Study Section, Immunity and Pathogenesis in AIDS
2005	Subcommittee review of Regional Centers of Excellence in Biodefense and Emerging Infectious Diseases, (RFA AI-04-018)
2005	Member, ZDK1 GRB-2 (M3) Study Section; Mouse Genetics and IBD
2005	Member, ZRG1 F07 20L Study Section; Immunology Fellowship and AREA (June 2005; October 2005)
2005	Member, ZRG1 III-F 01 Q, Innate Immunology and Inflammation (October 9-10, 2005)
2006	Member, ZRG1 III, Innate Immunology and Inflammation (June 29-30, 2006)
2006	Member, HIV VACC, HIV/AIDS Vaccines study section (VACC) (November 16, 2006)
2007	Member, review panel ZAI1 CCH-M (M1) - Cooperative Research Partnerships for Influenza Product Development (January 24-25, 2007)

Israel Science Foundation:

2002 - 03	Ad hoc grant reviewer
-----------	-----------------------

Crohn's & Colitis Foundation of America:

2003	Grant reviewer for RFA "Identification of the Microbial Antigens and Adjuvants that Activate Innate and Adaptive Immune Responses in the Intestine"
------	---

Meeting Moderator

2004	Moderator, "Mucosal Immunotherapy for the Treatment of Allergic Diseases" at Annual Meeting <i>American Association of Asthma, Allergy and Immunology</i>
2006	Co-chair <i>Mucosal Immunity / Preclinical Studies</i> , HIV Vaccines Meeting, March 31, 2006, Keystone Colorado

Thesis Advisory Committees:**Duke University**

2000- 04	James McLachlan (laboratory of Dr. Soman Abraham; Dept. of Pathology)
2002-06	Andrew Dufresne (laboratory of Dr. Matthias Gromeier; Dept. of Mol. Genetics and Microbiology)
2002 – 2006	Deanna Carrick (laboratory of Dr. Chris Nicchitta, Dept. of Cell Biology)
2002-05	Ali Johnson (laboratory of Dr. Meta Kuehn; Dept. of Biochemistry)
2003-06	Jennifer Lin (laboratory of Dr. Bryan Cullen; Dept. of Mol. Genetics and Microbiology)
2004- present	Rhea Brooking (laboratory of Dr. Soman Abraham, Dept. of Pathology)
2004- present	Quintin Quinones (laboratory of Dr. Salvatore Pizzo, Dept. of Pathology)
2004-present	Ryan Anderson (laboratory of Dr. Salvatore Pizzo, Dept. of Pathology)
2006-present	Anna P. Lillis (laboratory of Dr. Salvatore Pizzo, Dept. of Pathology)

The University of North Carolina at Chapel Hill

- 2003-present Joseph Thompson (laboratory of Dr. Robert Johnston, Dept. of Microbiology and Immunology)
 2004- 2007 Robert Garmise (laboratory of Dr. Anthony Hickey; School of Pharmacy, Division of Drug Delivery and Disposition)
 2005-present Anna LoBue (laboratory of Dr. Ralph Baric, Department of Microbiology and Immunology)

North Carolina State University College of Veterinary Medicine

- 2005-2006 Sudha Kakarla (laboratory of Dr. Gregg Dean, Dept. of Molecular Biomedical Sciences)

Teaching Responsibilities

Teaching/Speaker Experience

National & International (Invited Presentations)

1. Mucosal immunity to infectious diseases: Implications for HIV vaccine development. Medical Grand Rounds, Department of Veterans Affairs Medical Center, Boise, Idaho, 1995.
2. Novel Approaches for the Development of Mucosal Vaccines, Mucosal Immunology in the 21st Century meeting, Orange Beach, A, 2001.
3. Mucosal adjuvants for HIV vaccines, in AIDS Vaccine Research Committee (AVRC) symposium "Moving Biological Adjuvants into Clinical Trials", NIH, Bethesda, 2002
4. Induction of protective immunity with needle-free nasal immunization, at "Advanced Topics in Immunology" seminar, George Washington University, Washington, D.C., 2004.
5. Preclinical evaluation of IL-1 as an adjuvant for nasally administered vaccines, Istituto Superiore Di Sanita, Rome, Italy, 2004.
6. Preclinical evaluation of cytokines as adjuvants for mucosal vaccines, Microbiology/Immunology Seminar Series, Dartmouth Medical College, 2005.
7. Delivery of vaccine without needles: Strategies to develop nasally-administered vaccines, Indian Statistical Institute, 203 B.T. Road, Kolkata 700108, INDIA
8. Nasal Vaccines for Anthrax. The adjuvant makes the difference. Presented at the Rocky Mountain Laboratory, NIAID/NIH, Oct. 22, 2005.
9. Adjuvants for mucosal vaccines. Lecture presented to graduate students, Montana State University, February 6, 2006.
10. Nasal Vaccines for Anthrax. The adjuvant makes the difference. Presented to students and faculty, Montana State University, February 7, 2006.
11. Secretory IgA and HIV-1 Vaccines. Presented as a plenary session talk, HIV Vaccines, March 29, 2006 Keystone Resort, Keystone, Colorado.
12. Adjuvants and formulations for nasally-administered vaccines: Mechanisms of Action. Special Seminar, Department of Microbiology and Immunology, The University of Alabama at Birmingham, Birmingham, AL, August 10, 2006.

Local (Invited Presentations)

1. Characteristics of antibody-mediated prevention of herpes simplex virus-induced ocular disease. Presented at the University of South Alabama College of Medicine Department of Ophthalmology Grand Rounds teaching session. August, 1992.
2. Induction of serum and vaginal anti-HIV-1 antibody responses after intranasal immunization with the C4/V3 peptide TISP10MN(A). Presented at the Mucosal Immunology Conference Series, University of Alabama at Birmingham, Immunobiology Vaccine Center, September 29, 1994.
3. Mucosal immunity to infectious diseases: Implications for HIV vaccine development. Presented at the Infectious Disease Conference, Department of Medicine, Division of Infectious Diseases, Duke University Medical Center, May 15, 1994.
4. HIV vaccine development. Presented at the Howard Hughes Precollege Program in the Biological Sciences, Duke University, June 21, 1995.
5. Intranasal immunization with peptide immunogens. Presented at the North Carolina State University Veterinary College, Mucosal Immunology Discussion Group, November 6, 1997.
6. Mucosal vaccines for HIV and cancer. Presented at the East Carolina University School of Medicine for The Department of Microbiology and Immunology Seminar Series. Tuesday, October 5th, 1999.
7. Vaccination Strategies for the Induction of Mucosal Immunity against HIV. Presented to the Triangle Virology Group, December 1, 1999 at BAYER Corporation building, North Carolina State University Centennial Campus.

Teaching Responsibilities

Teaching/Speaker Experience

Local (Invited Presentations; continued)

8. Nasal vaccination strategies for the induction of Humoral and Cell-Mediated Immunity to HIV. Presented at the North Carolina State University Veterinary College, Immunology Seminar Series, October 9, 2000.
9. Cytokines as Mucosal Adjuvants for the Induction of Systemic and Mucosal Immune Responses. Presented at GlaxoWellcome, Biotechnology Product Development, Research Triangle Park, NC, November 17, 2000.
10. Cytokine Adjuvants for Nasally Administered Vaccines. Presented at the Respiratory Biology seminar series, Duke University Medical Center, March 5, 2003.
11. Needle-free Immunization. The possibilities and potential pitfalls of nasal immunization. Presented at the Biology Departmental Seminar Series, University of North Carolina at Charlotte, November 21, 2003.
12. Gender differences in HIV-1-specific CD8 responses in the murine reproductive tract and colon following immunization. Presented at the Departmental Seminar, February 10, 2005, Department of Microbiology and Immunology, The University of North Carolina at Chapel Hill.
13. Immunization strategies for the induction of HIV-1-specific immune responses in systemic and mucosal compartments. Presented at the Triangle Virology Meeting, February 15, 2005.
14. Nasal Vaccines for Anthrax. The adjuvant makes the difference. Presented at the NCSU College of Veterinary Medicine Fall 2005 Immunology/Microbiology Seminar Series. Oct. 24, 2005.
15. TLR ligands as adjuvants for nasally-administered vaccines: Some are better than others. Presented at the Immunology Seminar Series, Department of Immunology, Duke University Medical Center, September 26, 2006.
16. The Mucosal Immune System: Its role in homeostasis of the host. Presented at the Pediatric Allergy/Immunology Fellows Wednesday Conference, Duke University Medical Center, January 17, 2007.

Laboratory Instruction

1997 – 98	Francis Anthony Ennis, 3 rd year medical student
1997 – 99	Dr. Curtis P. Bradney, Postdoctoral Fellow
1997 – 99	Kevin L. Farmer, Duke Undergraduate
1999 – 01	Neil Sparks, NC State Masters student
1999 – 00	Andrea Bullock, Duke Undergraduate
1999 – 00	Caleb Schultz, Duke Undergraduate
2000 – 01	William Gwinn, Duke Graduate Student, Dept. of Pathology
2000 – 02	Cathy Doil, Duke Undergraduate
2000 – 01	Karen Gondro, Duke Undergraduate
2001 – 03	Dr. Shila K. Nordone, Postdoctoral Fellow
2005- Present	Ashley Sobel, Duke Undergraduate & HHMI summer research fellow
2005 – Present	Afton McGowen, Duke Graduate Student, Department of Pathology
2006 – Present	Nicole Paraggio, Duke Graduate Student, CMB Program
2006 – Present	Dr. William Gwinn, Postdoctoral Fellow

Duke Medical School Courses

2005 - Present	Lecturer, Duke University School of Medicine, <i>Body and Disease</i> Course; presented lecture on Bioterrorism and Emerging Infections
----------------	---

Graduate School Courses DUMC

1998 - Present	Lecturer, Duke University <i>Immunology 291</i>
2000 - Present	Lecturer, Duke University <i>Pathology 385</i>

Principal Academic & Administrative Activities:

Laboratory research

Instruct undergraduate and graduate students in laboratory research

Instruct postdoctoral fellows in laboratory research

Instruct graduate students in classroom lectures

Instruct graduate students as member of thesis committee

Grant & Contract Support

Completed

Staats, Herman F. (Project Leader)
NIH 5 UO1 AI35351-04 (B.F. Haynes)
Peptide immunogens for mucosal and systemic HIV vaccines. Project 1.
12/15/93 – 11/30/97
\$152,321 (33.3%) (Annual costs)

Staats, Herman F. (Project Leader)
DOD DAMD17-94-J-4467 (B.F. Haynes)
Structural and Functional Studies of Experimental HIV Synthetic Peptide Immunogens
9/30/94 – 3/31/99
\$33,980 (25%) (Annual costs)

Staats, Herman F. (Principal Investigator)
American Cancer Society Institutional Research Grant
Protection against tumor development in the lung by intranasal immunization with peptides corresponding to tumor antigen CTL epitopes
1/1/97 - 12/31/97
\$12,500 (0% effort) (Annual costs)

Staats, Herman F. (Principal Investigator)
Genetics Institutes, Cambridge, MA
Intranasal immunization with CTL epitope peptides and IL-12 for the induction of enhanced CTL activity
6/1/97 - 5/31/98
\$46,200 (0%) (Annual costs)

Staats, Herman F. (Co Core Leader)
NIH 2 P30 AI28662 (D. Bolognesi)
Center For AIDS Research; Peptide Synthesis Core A
7/1/94-6/30/99
\$94,002 (8%) (Annual costs)

Staats, Herman F. (Principal Investigator)
Fort Dodge Animal Health
Unrestricted research gift to cover direct costs of research.
Donated 2/22/2000
\$35,000 (0%) (Annual costs)

Staats, Herman F. (Principal Investigator)
CISTRON Biotechnology
Safety and efficacy of IL-1 β as a Vaccine Adjuvant
9/1/98 – 12/31/99
\$125,879 (0%) (Annual costs)

Staats, Herman F. (Principal Investigator)
AVENTIS Pasteur
Unrestricted gift to cover direct costs of research
1/2/2000 – 1/1/2001
\$30,000 (0%) (Annual costs)

Grant & Contract Support Completed

Staats, Herman F. (Principal Investigator)
U.S. – Israel Binational Science Foundation
Immunotherapy of lung metastases using cholera toxin-based mucosal vaccines.
9/1/98 – 10/31/2003
\$55,000 (0%) (Annual costs)

Staats, Herman F. (Co-investigator)
NIH RFP NIH-NIAID-DAIDS-00-10 (Dr. John Eldridge, P.I.)
HIV Vaccine Design and Development Teams
3/1/00 – 2/28/05
\$259,570 (25%) (Annual costs)

Staats, Herman F. (Project Leader)
NIH/NIAID PAR-97-056 (Dr. Barton Haynes, P.I.)
Design of Novel Immunogens and Adjuvants for HIV Vaccines
(Project #1, Mucosal Immunization with HIV/SIV Vaccines, H.F. Staats P.I.)
4/1/99 – 3/31/04
\$190,000 (40%) (Annual costs)

Staats, Herman F. (Co-investigator)
NIH N01-AI85343 (Montefiori/Letvin)
Primate Immunology Laboratory for AIDS Vaccine Research and Development
7/1/98 – 6/30/04
\$259,570 / 15% (Salary Support Only for Dr. Staats) (Annual costs)

Staats, Herman F. (Principal Investigator)
NIH R21 AI52027-01 (Herman Staats)
Epitope specificity of vaccine-induced anti-HIV IgG and IgA
1/01/2003 – 12/31/2003
\$125,000 (20%) (Annual costs)

Staats, Herman F. (Co-investigator)
NIH/NIAID 2 P01 AI43649-05 (David Montefiori)
HIV RAD: Structural Approaches to Vaccine Development; Core C
09/30/02 – 7/31/2003
\$174,327 / 10% (Annual costs)

Staats, Herman F. (Co-Investigator)
NIH/NIAID 1 R21 AI054175-01 (Gao, Feng)
Immunogenicity of an HIV virus-like particle vaccine
2/1/03 – 1/31/05
\$231,000 / 10% (Annual costs)

Staats, Herman F. (Co-investigator)
NIH 1 R21 DE016404-01 (Dr. Laura P. Hale, P.I.)
Novel oral adjuvant for dental vaccines
12/1/04-11/30/06
\$200,000 (9%) (Annual costs)

Grant & Contract Support

Current

Staats, Herman F. (Project Leader)

NIH U19 AI56572-01 (Micheal Dee Gunn, M.D., P.I.)

Novel TLR Ligand Mimetics as Adjuvants and Therapeutics (Project 1, Anti-TLR antibodies as select agent vaccine adjuvants, H.F. Staats P.I.)

07/01/03- 06/30/08

\$178,893 (20%) (Annual costs)

Staats, Herman F. (Principal Investigator)

NIH 1 R21 AI064185-01 (Herman F. Staats, P.I.)

Mast cell activator as adjuvant for biodefense vaccines

04/01/05- 03/31/07

\$200,000 (15%) (Annual costs)

Staats, Herman F. (Co-investigator)

NIH RFP-NIH-NIAID-DAIT-BAA-04-18 (D. Wagener)

Population Genetics Analysis Program: Immunity to Vaccines/Infections

9/30/04 – 9/30/09

\$149,407 (15%) (Annual costs)

Staats, Herman F. (co-investigator)

NIH Foundation (Gates Foundation Grand Challenges in Global Health)

Surface modified nanostructures as delivery vehicles for vaccines

7/1/05-6/30/08

\$19,452 (H.F. Staats 2% effort) (Annual costs)

Staats, Herman F. (Principal Investigator)

NIH 1 RO1 AI064879-01 (H.F. Staats, P.I.)

Nasal Vaccines: Mode of Action, Composition and Delivery

12/1/05 – 11/30/10

\$365,132 (35%) (Annual costs)

Staats, Herman F. (Principal Investigator)

NIH 5U54-AI-057157-05 SUB #22

Novel Vaccine Platform and Adjuvants for Biodefense

3/01/07 – 2/28/08

\$67,000 (Annual costs)

Patents

Issued:

1. Substantially non-toxic biologically active mucosal adjuvants in vertebrate subjects. USPTO # 6,270,758. Filed October 8, 1998, Issued August 7, 2001. Inventors: Herman F. Staats, Barton F. Haynes, Dhavalkumar D. Patel and Gregory D. Sempowski.
2. Interleukin-1 muteins useful as vaccine adjuvants. USPTO # 6,656,462. Filed December 4, 2000, Issued December 2, 2003. Inventors: Richard S. Dondero and Herman F. Staats
3. Substantially non-toxic biologically active mucosal adjuvants in vertebrate subjects. USPTO # 7,041,294. Filed June 5, 2001. Issued May 9, 2006. Inventors: Herman F. Staats, Barton F. Haynes, Dhavalkumar D. Patel and Gregory D. Sempowski.

Patents

Pending:

1. A novel adjuvant capable of specifically activating the adaptive immune response. Salvatore V. Pizzo, Justin P. Hart, James B. McLachlan, Herman F. Staats, and Soman N. Abraham. United States Patent Application #20050031630.
2. Interleukin-1 muteins useful as vaccine adjuvants. Richard S. Dondero and Herman F. Staats. United States Patent Application #20040253208
3. Interleukin-1 muteins useful as vaccine adjuvants. Richard S. Dondero and Herman F. Staats. United States Patent Application # 20010036452.

Research Interests

Mucosal immunology/mucosal vaccines.

Development of adjuvants and immunization methods for use with nasally-administered vaccines.

Understanding the mechanism of action of nasal vaccine adjuvants.

BIBLIOGRAPHY

Articles (Peer Review)

1. Lausch, R.N., H. Staats, J.F. Metcalf, and J.E. Oakes. 1990. Effective antibody therapy in herpes simplex virus ocular infection. Characterization of recipient immune response. *Intervirology* 31:159-165.
2. Lausch, R.N., H. Staats, J.E. Oakes, G.H. Cohen, and R.J. Eisenberg. 1991. Prevention of herpes keratitis by monoclonal antibodies specific for discontinuous and continuous epitopes on glycoprotein D. *Invest. Ophthalmol. Vis. Sci.* 32:2735-2740.
3. Staats, H.F., J.E. Oakes, and R.N. Lausch. 1991. Anti-glycoprotein D monoclonal antibody protects against herpes simplex virus type 1-induced diseases in mice functionally depleted of selected T-cell subsets or asialo GM1+ cells. *J. Virol.* 65:6008-6014.
4. Xu-Amano, J., H. Kiyono, R.J. Jackson, H.F. Staats, K. Fujihashi, P.D. Burrows, C.O. Elson, S. Pillai, and J.R. McGhee. 1993. Helper T cell subsets for immunoglobulin A responses: oral immunization with tetanus toxoid and cholera toxin as adjuvant selectively induces Th2 cells in mucosa associated tissues. *J Exp Med* 178:1309-1320.
5. Staats, H.F., and R.N. Lausch. 1993. Cytokine expression in vivo during murine herpetic stromal keratitis. Effect of protective antibody therapy. *J.Immunol.* 151:277- 283.
6. Xu-Amano, J., R.J. Jackson, K. Fujihashi, H. Kiyono, H.F. Staats, and J.R. McGhee. 1994. Helper Th1 and Th2 cell responses following mucosal or systemic immunization with cholera toxin. *Vaccine* 12:903-911.
7. Horowitz, N.S., H.F. Staats, and T.J. Palker. 1995. Effect of bismuth salts on systemic and mucosal immune responses to orally administered cholera toxin. *Immunopharmacol.* 31:31-41.
8. Marinaro, M., H.F. Staats, T. Hiroi, R.J. Jackson, M. Coste, P.N. Boyaka, N. Okahashi, M. Yamamoto, H. Kiyono, H. Bluethmann, K. Fujihashi, and J.R. McGhee. 1995. Mucosal adjuvant effect of cholera toxin in mice results from induction of T helper 2 (Th2) cells and IL-4. *J. Immunol.* 155:4621-4629.
9. Takahashi, I., H. Kiyono, R.J. Jackson, K. Fujihashi, H.F. Staats, S. Hamada, J.D. Clements, K.L. Bost, and J.R. McGhee. 1996. Epitope maps of the Escherichia coli heat-labile toxin B subunit for development of a synthetic oral vaccine. *Infect. Immun.* 64:1290-1298.
10. Palker, T.J., A.J. Muir, D.E. Spragion, H.F. Staats, A. Langlois, and D.C. Montefiori. 1996. The V3 domain of SIVmac251 gp120 contains a linear neutralizing epitope. *Virology* 224:415-426.
11. Staats, H. F., W. G. Nichols, and T. J. Palker. 1996. Mucosal immunity to HIV-1: systemic and vaginal antibody responses after intranasal immunization with the HIV-1 C4/V3 peptide T1SP10 MN(A). *J. Immunol.* 157:462-472.
12. VanCott, J.L., H.F. Staats, D.W. Pascual, M. Roberts, S.N. Chatfield, M. Yamamoto, M. Coste, P.B. Carter, H. Kiyono, and J.R. McGhee. 1996. Regulation of mucosal and systemic antibody responses by T helper cell subsets, macrophages, and derived cytokines following oral immunization with live recombinant Salmonella. *J.Immunol.* 156:1504- 1514.
13. Staats, H.F., S.P. Montgomery, and T.J. Palker. 1997. Intranasal Immunization Is Superior to Vaginal, Gastric, or Rectal Immunization For the Induction of Systemic and Mucosal Anti-Hiv Antibody Responses. *AIDS Res. Hum. Retroviruses* 13:945-952.

14. Porgador, A., H.F. Staats, B. Faiola, E. Gilboa, and T.J. Palker. 1997. Intranasal immunization with CTL epitope peptides from HIV-1 or ovalbumin and the mucosal adjuvant cholera toxin induces peptide-specific CTLs and protection against tumor development in vivo. *J. Immunol.* 158:834-841.
15. Lee, D.M., H.F. Staats, J.S. Sundy, D.D. Patel, G.D. Sempowski, R.M. Searce, D.M. Jones, and B.F. Haynes. 1998. Immunologic Characterization of CD7-Deficient Mice. *J. Immunol.* 160:5749-5756.
16. Porgador, A., H.F. Staats, Y. Itoh, and B.L. Kelsall. 1998. Intranasal immunization with cytotoxic T-lymphocyte epitope peptide and mucosal adjuvant cholera toxin: selective augmentation of peptide-presenting dendritic cells in nasal mucosa-associated lymphoid tissue. *Infect. Immun.* 66:5876-5881.
17. Bartlett, J.A., S.S. Wasserman, C.B. Hicks, R.T. Dodge, K.J. Weinhold, C.O. Tacket, N. Ketter, A.E. Wittek, T.J. Palker, B.F. Haynes, M. Enama, K. Muth, S. Beckner, E. Yu, C. Berend, T. Matthews, H. Staats, R. Searce, M.A. Moody, D. Spragion, K. Shipp, L. Stewart, L. Fox, A. Shaver, D. Stein, and J. Pelosi. 1998. Safety and immunogenicity of an HLA-based HIV envelope polyvalent synthetic peptide immunogen. *AIDS* 12:1291-1300.
18. Staats, H.F., and F.A. Ennis. 1999. IL-1 is an effective adjuvant for mucosal and systemic immune responses when co-administered with protein immunogens. *J. Immunol.* 162:6141-6147.
19. Cheng, H., T.M. Tumpey, H.F. Staats, N. van Rooijen, J.E. Oakes, and R.N. Lausch. 2000. Role of macrophages in restricting herpes simplex virus type 1 growth alter ocular infection. *Invest. Ophthalmol. Vis. Sci.* 41:1402-1409.
20. Laskowitz, D.T., D.M. Lee, D. Schmechel, and H.F. Staats. 2000. Altered immune responses in apolipoprotein E-deficient mice. *J. Lipid Res.* 41:613-620.
21. Boyaka, P.N., P.F. Wright, M. Marinaro, H. Kiyono, J.E. Johnson, R.A. Gonzales, M.R. Ikizler, J.A. Werkhaven, R.J. Jackson, K. Fujihashi, S. Di Fabio, H.F. Staats, and J.R. McGhee. 2000. Human Nasopharyngeal-Associated Lymphoreticular Tissues: Functional Analysis of Subepithelial and Intraepithelial B and T Cells from Adenoids and Tonsils. *Am J Pathol* 157:2023-2035.
22. Staats, H.F., C.P. Bradney, W.M. Gwinn, S.S. Jackson, G.D. Sempowski, H.-X. Liao, N.L. Letvin, and B.F. Haynes. 2001. Cytokine requirements for induction of systemic and mucosal cytotoxic T lymphocytes after nasal immunization. *J. Immunol.* 167:5386-5394.
23. Bradney, C.P., G.D. Sempowski, H.-X. Liao, B.F. Haynes, and H.F. Staats. 2002. Cytokines as adjuvants for the induction of anti-Human Immunodeficiency Virus Peptide Immunoglobulin G (IgG) and IgA Antibodies in Serum and Mucosal Secretions after Nasal Immunization. *J. Virol.* 76:517-524.
24. Wright, P.F., P.A. Kozlowski, G.K. Rybczyk, P. Goepfert, H.F. Staats, T.C. VanCott, D. Trabottini, E. Sannella, and J. Mestecky. 2002. Detection of mucosal antibodies in HIV type-1 infected individuals. *AIDS Res. Hum. Retroviruses* 18:1291-1300.
25. Liao, H.-X., G.J. Cianciolo, H.F. Staats, R.M. Searce, D.M. Lapple, S.H. Stauffer, J.R. Thomasch, S.V. Pizzo, D.C. Montefiori, and M. Hagen. 2002. Increased immunogenicity of HIV envelope subunit complexed with [alpha]2-macroglobulin when combined with monophosphoryl lipid A and GM-CSF. *Vaccine* 20:2396-2403.
26. McLachlan, J.B., J.P. Hart, S.V. Pizzo, C.P. Shelburne, H.F. Staats, M.D. Gunn, and S.N. Abraham. 2003. Mast cell-derived tumor necrosis factor induces hypertrophy of draining lymph nodes during infection.[see comment]. *Nat. Immunol.* 4:1199-1205.
27. Sufka, S.A., G. Ferrari, V.E. Gryszowka, T. Wrin, S.A. Fiscus, G.D. Tomaras, H.F. Staats, D.D. Patel, G.D. Sempowski, N.S. Hellmann, K.J. Weinhold, and C.B. Hicks. 2003. Prolonged CD4+ cell/virus load discordance during treatment with protease inhibitor-based highly active antiretroviral therapy: immune response and viral control.[see comment]. *J. Infect. Dis.* 187:1027-1037.
28. Qimron, U., L. Paul, E. Bar-Haim, N. Blushtain, L. Eisenbach, H.F. Staats, and A. Porgador. 2004. Non-replicating mucosal and systemic vaccines: quantitative and qualitative differences in the Ag-specific CD8+ T cell population in different tissues. *Vaccine* 22:1390-1394.
29. Peacock, J.W., S.K. Nordone, S.S. Jackson, H.-X. Liao, N.L. Letvin, A.G. Yafal, L. Gritz, G.P. Mazzara, B.F. Haynes, and H.F. Staats. 2004. Gender Differences in Human Immunodeficiency Virus Type I-Specific CD8 Responses in the Reproductive Tract and Colon following Nasal Peptide Priming and Modified Vaccinia Virus Ankara Boosting. *J. Virol.* 78:13163-13172.
30. Egan, M.A., S.Y. Chong, M. Hagen, S. Megati, E.B. Schadeck, P. Piacente, B.J. Ma, D.C. Montefiori, B.F. Haynes, Z.R. Israel, J.H. Eldridge, and H.F. Staats. 2004. A comparative evaluation of nasal and parenteral vaccine adjuvants to elicit systemic and mucosal HIV-1 peptide-specific humoral immune responses in cynomolgus macaques. *Vaccine* 22:3774-3788.
31. Kobayashi, R., T. Kohda, K. Kataoka, H. Ihara, S. Kozaki, D.W. Pascual, H.F. Staats, H. Kiyono, J.R. McGhee, and K. Fujihashi. 2005. A Novel Neurotoxoid Vaccine Prevents Mucosal Botulism. *J. Immunol.* 174:2190-2195.

32. Gopal, I.N., A. Quinn, S.C. Henry, J.D. Hamilton, H.F. Staats, and R. Frothingham. 2005. Nasal Peptide Vaccination Elicits CD8 Responses and Reduces Viral Burden after Challenge with Virulent Murine Cytomegalovirus. *Microbiol. Immunol.* 49:113-119.
33. Haynes, B.F., J. Fleming, E.W. St. Clair, H. Katinger, G. Stiegler, R. Kunert, J. Robinson, R.M. Searce, K. Plonk, H.F. Staats, T.L. Ortel, H.-X. Liao, and S.M. Alam. 2005. Cardiolipin Polyspecific Autoreactivity in Two Broadly Neutralizing HIV-1 Antibodies. *Science* 308:1906-1908.
34. J. M. Thompson, A. C. Whitmore, J. L. Konopka, M. L. Collier, E. M. B. Richmond, H. F. Staats, N. L. Davis, and R. E. Johnston. 2006. Mucosal and Systemic Adjuvant Activity of Alphavirus Replicon Particles. *PNAS, USA.* 103: 3722-3727.
35. Nordone, S.K., J.W. Peacock, S.M. Kirwan, and H.F. Staats. 2006. Capric acid and hydroxypropylmethylcellulose increase the immunogenicity of nasally administered peptide vaccines. 2006. *AIDS Res. Human Retrovir.* 22:558-568.
36. Maddaloni, M., H.F. Staats, D. Mierzejewska, T. Hoyt, A. Robinson, G. Callis, S. Kozaki, H. Kiyono, J. R. McGhee, K. Fujihashi, and D. W. Pascual. 2006. Mucosal Vaccine Targeting Improves Onset of Mucosal and Systemic Immunity to Botulinum Neurotoxin A (BoNT/A). *J. Immunol.* 177:5524-5532.
37. Yu, J.-S., J.W. Peacock, S. Vanleeuwen, T. Hsu, W. R. Jacobs, Jr., M. J. Cayabyab, N. L. Letvin, R. Frothingham, H. F. Staats, H.-X. Liao, and B. F. Haynes. Generation of Mucosal Anti-Human Immunodeficiency Virus Type 1 T Cell Responses by Recombinant Mycobacterium smegmatis. *Clinical and Vaccine Immunology*, 13:1204-1211, 2006.
38. Hale, L. P., D. J. Fitzhugh, and H. F. Staats. Oral Immunogenicity of the Plant Proteinase Bromelain. In Press, *International Immunopharmacology*.
39. J.B. McLachlan, C.P. Shelburne, J.P. Hart, S.V. Pizzo, R. Goyal, R. Brooking, H. F. Staats and S. N. Abraham. A Novel Class of Mucosal Vaccine Adjuvants that Exploit the Immunoregulatory Functions of Mast Cells. Submitted, *Nature Medicine*.

Chapters & Invited Reviews

1. H. F. Staats, R. J. Jackson, I. Takahashi, S. N. Chatfield, H. Kiyono, M. Hudson, R. M. Gilley, and J. R. McGhee. Oral immunization with alternative antigen delivery systems for optimal systemic and mucosal immune responses. *Current Topics in Mucosal Immunology*, 91 - 104. M. Tsuchiya et al, editors. 1993.
2. H. F. Staats, J. Xu-Amano, I. Takahashi, H. Kiyono, M. E. Hudson, R. M. Gilley, S. N. Chatfield, and J. R. McGhee. Oral vaccine models: multiple delivery systems employing tetanus toxoid. R. J. Jackson, *Annals of the New York Academy of Sciences*. Volume 730, pp. 217 - 234. August 15, 1994.
3. J. R. McGhee, R. J. Jackson, H. F. Staats, M. Marinaro, M. Coste, K. Fujihashi, M. Yamamoto, J. Xu-Amano, and H. Kiyono. The common mucosal immune system: From basic principles to potential mucosal vaccines for otitis media. In *Immunobiology in Otolaryngology, Rhinology and Laryngology*. G. Mogi et al. editors. Kugler Publications, Amsterdam/New York. 1994.
4. J. R. McGhee, J. Xu-Amano, C. J. Miller, R. J. Jackson, K. Fujihashi, H. F. Staats, and H. Kiyono. The common mucosal immune system: From basic principles to enteric vaccines with relevance for the female reproductive tract. *Reprod. Fertil. Dev.* 6:369-379, 1994.
5. H.F. Staats, R. J. Jackson, M. Marinaro, I. Takahashi, H. Kiyono, and J. R. McGhee. Mucosal immunity to infection with implications for vaccine development. *Current Opinion in Immunology*, 6:572-583, 1994.
6. J. R. McGhee, R. J. Jackson, H. Kiyono, S. N. Chatfield, M. E. Hudson, R. M. Gilley, and H. F. Staats. Peyer's patches. *Strategies for Pediatric Vaccines: Conventional and Molecular Approaches. Report of the 104th Ross Conference on Pediatric Research.* pp 28-36, 1994.
7. J.R. McGhee, M. Marinaro, I. Takahashi, R.J. Jackson, J. Clements, H.F. Staats, K.L. Bost, and H. Kiyono. Vaccines for mucosal immunity: Unique delivery systems and immune response analyses for Th1/Th2 and IgE/IgA b cells. *Mucosal Immunology Update* 2:21, 1994.
8. B.F. Haynes, H.F. Staats, H.M. Vu, R. De Lormier, A.M. Moody, L.D. Spicer, F.E. Ward, T.J. Matthews, and T.J. Palker. HIV-1 peptide immunogens as vaccine and immunotherapy candidates. *Dixieme des Colloque de Cent Gardes*, Elsevier Press, 191-195, 1995.
9. M. Marinaro, H. Kiyono, J.L. VanCott, N. Okahashi, F.W. van Ginkel, D. W. Pascual, E. Ban, R. J. Jackson, H.F. Staats, and J.R. McGhee. Vaccines for selective induction of helper Th1 and Th2 cell responses and their roles in mucosal immunity. In *Essentials of Mucosal Immunology*. Martin F. Kagnoff and Hiroshi Kiyono, editors. Academic Press, San Diego, 1996.

Chapters & Invited Reviews (continued)

10. H. F. Staats and J. R. McGhee. Applications of basic principles of mucosal immunity to vaccine development. In *Mucosal Vaccines*. Hiroshi Kiyono, Pearay L. Ogram, and Jerry R. McGhee, editors. Academic Press, San Diego, 1996.
11. H.F. Staats and J.R. McGhee. Mucosal immunity in HIV infection. In *Immunology of HIV Infection*. Sudhir Gupta, editor. Plenum Press, New York, 1996.
12. H.F. Staats. Intranasal immunization with carrier-free synthetic peptides. *Mucosal Immunology Update* 5:16-20, 1997.
13. H. F. Staats and J. R. McGhee. Human Retroviral Infection: Immunological and Molecular Therapies. IN: *Human Retroviral Infection: Immunological and Therapeutic Control*. Plenum Pub Corp; 1st edition (June 15, 2000).
14. B.F. Haynes, H.X. Liao, H.F. Staats, M.S. Alam, K.J. Weinhold, D.C. Montefiori. HIV vaccine development at Duke University Medical Center. *Immunologic Research* 22: 263-269, 2001.
15. U. Qimron, Madar N, Bar-Haim E, Eisenbach L, Staats-H.F., Porgador A. Anti-cancer mucosal vaccines: therapeutic efficacy against cancers growing in mucosal organs. In: I.P. Witz (ed), *Proceedings of the 2nd international conference on tumor microenvironment*. Monduzzi Editore, Bologna, Italy. 2002, pp. 197-206.
16. H. F. Staats, J. B. McLachlan, C. P. Shelburne, J. P. Hart, S. V. Pizzo, S. N. Abraham. Mast cells and Mucosal Vaccines. *Mucosal Immunology Update* Volume 13, No. 3, Third Quarter, 2005.
17. K. Fujihashi, H.F. Staats, S. Kozaki and D.W. Pascual. Mucosal vaccine development for botulinum intoxication. *Expert Rev. Vaccines.*, 2007.

Abstracts

1. H. F. Staats, J. E. Oakes, and R. N. Lausch. Therapeutically effective monoclonal antibody anti-gD treatment enhances delayed type hypersensitivity (DTH) and suppresses natural killer (NK) responses in HSV-1 ocular infection. Presented as a paper at the Annual Meeting of the Southeastern and South Central Branches of the American Society for Microbiology, November, 1989.
2. H.F. Staats, J.E. Oakes, and R.N. Lausch. Monoclonal antibody therapy protects against herpes simplex virus type 1 induced stromal keratitis in the absence of CD8⁺ cells. Presented as a poster, June, 1990, ASBMB/AAI.
3. H. F. Staats, J. E. Oakes, and R. N. Lausch. Monoclonal antibody therapy protects against herpes simplex virus type 1 induced stromal keratitis in the absence of CD4⁺ or CD8⁺ cells. Presented as a poster at the 15th International Herpesvirus Workshop. August, 1990.
4. H. F. Staats, J. E. Oakes, G. Cohen, R. J. Eisenberg, and R. N. Lausch. Prevention of herpes keratitis by monoclonal antibodies specific for discontinuous and continuous epitopes on glycoprotein D. Presented as a paper, ARVO, May, 1991.
5. H. F. Staats, J. E. Oakes, and R. N. Lausch. Quantitation of interleukin 1 alpha in mouse corneal buttons after HSV-1 ocular infection with and without protective antibody therapy. Presented as a poster, May, 1992 at the Association for Research in Vision and Ophthalmology (ARVO) meeting.
6. H.F. Staats and R.N. Lausch. Sponsor, J. R. McGhee. Cytokine expression *in vivo* during herpetic stromal keratitis: Effect of protective antibody therapy. Presented as a poster, May, 1993, AAI meeting.
7. I. Takahashi, H. F. Staats, J. Clements, K. Bost, K. Fujihashi, R. J. Jackson, H. Kiyono, S. Hamada, and Jerry R. McGhee. Molecular and cellular characterization of the immune response to heat-labile enterotoxin (LT) of *Escherichia coli*. December 1993, 29th U.S. - JAPAN Joint Conference "Cholera and related diarrheal diseases".
8. I. Takahashi, H.F. Staats, R.J. Jackson, H. Kiyono, S. Hamada, J.D. Clements, K.L. Bost, and J.R. McGhee. Oral immunization with a partial peptide of *E. coli* heat-labile toxin induces Th2 cell mediated S-IgA responses. 1994. *FASEB J.* 8:1139 (A# A196).
9. R.J. Jackson, H.F. Staats, I. Takahashi, M.E. Hudson, R.M. Gilley, H. Kiyono, and J.R. McGhee. Systemic and mucosal antibody responses to orally administered microencapsulated tetanus toxoid (TT). 1994. *FASEB J.* 8:2988 (A# A516).
10. M. Marinaro, H.F. Staats, H. Kiyono, and J.R. McGhee. Antibody isotype profiles associated with the use of cholera toxin (CT) as an oral adjuvant. 1994. *FASEB J.* 8:2979 (A# A514).
11. H.F. Staats, R.J. Jackson, I. Takahashi, S.N. Chatfield, H. Kiyono, and J.R. McGhee. Mucosal and systemic immunity to tetanus toxoid following oral immunization with r-*Salmonella* tox-c. 1994. *FASEB J.* 8:1138 (A# A197).

Abstracts

12. H. F. Staats, W. G. Nichols, and T. J. Palker. Induction of serum and vaginal anti-HIV-1 antibody responses after intranasal immunization with the C4/V3 peptide T1SP10MN(A). Presented as a poster at the Conference on AIDS Vaccine Development (Seventh NCVDG Meeting), Nov. 6 - 10, 1994, Reston, VA.
13. H. F. Staats and T. J. Palker. Increased immunogenicity of peptides used as oral vaccines by coadministration of protease inhibitors. Presented at the 1995 American Association of Immunologists meeting, April 9 - 13, Atlanta, GA.
14. H. F. Staats and T. J. Palker. Induction of persistent serum and vaginal anti-HIV antibody responses by intranasal immunization with HIV peptides and cholera toxin. Presented as a poster at the 8th NCVDG Meeting, Bethesda, MD, February 11-15, 1996.
15. H. F. Staats, S.P. Montgomery, and T.J. Palker. Optimization of mucosal immunization strategies using HIV peptides for the induction of serum and vaginal anti-HIV antibody responses. Presented as a poster at the 8th NCVDG Meeting, Bethesda, MD, February 11-15, 1996.
16. H. F. Staats and T.J. Palker. Induction of cytotoxic T-lymphocytes specific for HIV-1 and protection against tumor challenge by intranasal immunization with peptides and cholera toxin. Presented as a poster at the 8th NCVDG Meeting, Bethesda, MD, February 11-15, 1996.
17. D.M. Lee, J.S. Sundry, H. F. Staats, B. Koller, D.D. Patel, and B.F. Haynes. Initial characterization of CD7 deficient mice: Evidence of a role for CD7 in thymocyte maturation. Presented as a poster at the 1996 American Federation for Clinical Research meeting.
18. H. F. Staats, A. Porgador, B. Faiola, E. Gilboa, and T. J. Palker. Induction of cytotoxic T lymphocytes (CTL) specific for HIV-1 or protection against tumor challenge by intranasal immunization with CTL peptides and cholera toxin. Presented as a poster at the 1996 American Association of Immunologists meeting.
19. Intranasal immunization with HIV peptides and cholera toxin induces mucosal anti-HIV antibody and CTL responses. Herman F. Staats and Thomas J. Palker. Presented at the Institute of Human Virology 1996 Annual Meeting, September 7 -13, 1996.
20. H. F. Staats. Induction of MHC-restricted CTL specific for distinct epitopes by intranasal immunization with a combination of CTL epitope peptides and the mucosal adjuvant cholera toxin. Presented as a poster at the AAAAI/AAI/CIS Joint Meeting, San Francisco, Feb. 21 - 26, 1997.
21. H. F. Staats and Francis A. Ennis Jr. Mucosal adjuvanticity of Interleukin 1. Presented as an oral presentation and a poster at the Experimental Biology 1999 meeting, Washington, DC, April 17 - 21, 1999.
22. H. F. Staats, N. Sparks, L. Casey, G. Nabors, and R.S. Dondero. IL-1 β is an effective adjuvant for nasal vaccines. Presented as a poster at the Seventh Annual Conference of the International Cytokine Society, Dec. 8, 1999.
23. J. Demarest, H. Staats, M. Kelly, J. Ottinger, V. Edmundson, J. Mathieson, S. Fiscus, C.D. Pilcher, J. Lennox, J.J. Eron, Jr., and C.B. Hicks. Immunologic Characterization of a Cohort with Primary HIV Infection Treated with a Hydroxyurea-Containing Non-Pi Anti-retroviral Regimen. Abstract # 560, Presented at the 7th Annual Retrovirus Conference.
24. Herman F. Staats, Curtis P. Bradney, Shawn S. Jackson, Gregory D. Sempowski, Hua-Xin Liao, Norman L. Letvin and Barton F. Haynes. Cytokine requirements for induction of systemic CTL after nasal immunization with an HIV immunogen. Presented as a poster at the Immunology 2000 AAI/CIS meeting in Seattle, WA, May 16, 2000.
25. Angel Porgador, Lada Paul, Kelly Corr, Erez Bar-Haim, Lea Eisenbach, and Herman Staats. Protection against Lung metastasis by intranasal immunization with CTL epitope peptides and mucosal adjuvants. Presented as a poster at the Immunology 2000 AAI/CIS meeting in Seattle, WA, May 16, 2000.
26. K. Wilson, R. Brown, H. Staats, P. Hanna, and G. Hong. Colonization of Mice by Human Commensals Engineered to Produce Tetanus Toxin Fragment C. VA Medical Center and Duke University Medical Center, Durham, NC. IDSA Meeting, 2000. Abstract NUMBER 100259.
27. C.D. Pilcher, H. F. Staats, S.A. Fiscus, M.S. Cohen, C.B. Hicks and J.J. Eron Jr. Biological Correlates of Infectiousness in Semen in Primary HIV-1 Infection. 8th Conference on Retroviruses and Opportunistic Infections.
28. Herman F. Staats, Curtis P. Bradney, Tom G. Tlusty, Gregory D. Sempowski, Hua-Xin Liao and Barton F. Haynes. Enhanced induction of mucosal anti-HIV IgA responses by nasal immunization with HIV immunogen and cytokine adjuvants. AIDS Vaccines in the New Millennium, Keystone Symposium, Keystone, Colorado, March 28 - April 3, 2001.
29. H-X. Liao, G. J. Cianciolo, H. F. Staats, R. M. Searce, S. V. Pizzo, D. C. Montefiori and B. F. Haynes. Combination of monophosphoryl lipid A (MPL) and GM-CSF with HIV immunogen coupled to alpha-2-macroglobulin ($\alpha 2M$)

dramatically enhanced antigen immunogenicity. AIDS Vaccines in the New Millennium, Keystone Symposium, Keystone, Colorado, March 28 – April 3, 2001.

Abstracts

30. H. F. Staats, C. R. Doil, G. S. Nabors, L. Casey, D. E. Briles and R. S. Dondero. Protection against *Streptococcus pneumoniae* morbidity by nasal immunization with PspA and IL-1 β or mutant IL-1 β . American Society for Microbiology meeting (101st General Meeting Orlando, Florida May 20-24, 2001).
31. N. L. Sparks, K. Fujihashi, J. R. McGhee, and H. F. Staats. Human Intestinal Epithelial Cells, Not Intestinal Fibroblasts, Secrete Pro-Inflammatory Cytokines in Response to Mucosal Adjuvants Cholera Toxin and IL-1 β *In Vitro*. American Society for Microbiology meeting (101st General Meeting Orlando, Florida May 20-24, 2001).
32. W. M. Gwinn and H. F. Staats. Effect of nasally administered mucosal adjuvants on the number and phenotype of leukocytes in the CLN of mice. American Society for Microbiology meeting (101st General Meeting Orlando, Florida May 20-24, 2001).
33. G. Hong, R. Brown, H. Staats, and K. Wilson. Enteric biota as vaccine vector using mouse as a model system. Submitted to the American Society for Microbiology meeting (101st General Meeting Orlando, Florida May 20-24, 2001).
34. J. Demarest, M. Kelly, J. Ottinger, V. Edmundson, J. Mathieson, H. Staats, S. Fiscus, C.D. Pilcher, J. Lennox, J.J. Eron, Jr., and C.B. Hicks. Hydroxyurea Suppresses Formation of HIV-p24-Specific T-cells When Administered During Acute HIV Infection. 8th Conference on Retroviruses and Opportunistic Infections.
35. L. Paul, U. Qimron, Y. Chernobrov, E. Bar-Haim, L. Eisenbach, H. F. Staats, and A. Porgador. Mucosal and parenteral vaccines: organ-specific distribution of vaccine-induced CD8+ T cells. 2001 International Congress of Immunology meeting, Stockholm.
36. U. Qimron, L. Paul, Y. Chernobrov, E. Bar-Haim, L. Eisenbach, H. Staats, and A. Porgador. Mucosal and parenteral vaccines: organ-specific distribution of vaccine-induced CD8+ T cells. Presented at the Walter Reed 7th Symposium on Basic Aspects of Vaccines. May 2 – 4, 2001.
37. H. F. Staats, T. G. Tlusty, M. A. Egan, S.-Y. Chong, G. D. Sempowski, H.-X. Liao, Z. R. Israel, J. H. Eldridge and B. F. Haynes. CYTOKINE ADJUVANTS FOR THE INDUCTION OF ANTI-HIV MUCOSAL IgA AND CELL-MEDIATED IMMUNE RESPONSES. . Abstract # 232. Presented at the AIDS Vaccine 2001 meeting, September 5th, 2001, Philadelphia, PA.
38. H.-X. Liao*, G. J. Cianciolo, H. F. Staats, R. M. Searce, D. M. Lapple, S. Stauffer, J. R. Thomasch, S. V. Pizzo, D. C. Montefiori, and B. F. Haynes. Combination of Monophosphoryl Lipid A and GM-CSF Adjuvant with an HIV Envelope Immunogen Coupled to α 2-Macroglobulin Dramatically Increases HIV Envelope Subunit Immunogenicity. Abstract #126, Presented at the AIDS Vaccine 2001 meeting, September 5th, 2001, Philadelphia, PA.
39. P. Wright, P. Kozlowski, E. Sannella, G. Rybczyk, P. Goepfert, H. Staats, T. VanCott, D. Trabattori, and J. Mestecky. Detection of Mucosal Antibodies in HIV-Infected Individuals. Abstract # 319. Presented at the AIDS Vaccine 2001 meeting, September 5th, 2001, Philadelphia, PA.
40. A. Quinn, H. F. Staats, W. Jiang, R. Frothingham. CD8-targeted vaccine to prevent opportunistic infections in persons with HIV. Presented at 2nd Annual Sequella Global Tuberculosis Foundation Tuberculosis Vaccine Conference; 2001 November 7-9; Montreal, Canada.
41. S. K. Nordone and H. F. Staats. Enhanced immunogenicity of nasally administered HIV peptides using mucoadhesive polymers. Presented at the 9th Conference on Retroviruses and Opportunistic Infections, Feb. 24-28, 2002.
42. S. Sufka, G. Ferrari, G. Sempowski, H. Staats, V. Gryszowka, V. Teaberry, K. Weinhold, C. Hicks. Immune Correlates of a Discordant CD4/VL Response to PI-Based HAART. 9th Conference on Retroviruses and Opportunistic Infections, Feb. 24-28, 2002.
43. S. Chong, M. Egan, S. Megati, M. Hagen, E. Schadeck, E. Mishkin, H.F. Staats, B. Haynes, J. Eldridge and Z. Israel. Elicitation of mucosal immunity in cynomolgous macaques with a HIV-1 peptide vaccine: comparison of routes of immunizations and various adjuvant formulations. Presented at 2002 Keystone conference.
44. S. K. Nordone and H. F. Staats. Enhancement of nasally administered HIV peptide immunogenicity using a polysaccharide bioadhesive. Presented as a poster at the XIV International AIDS Conference, Barcelona, Italy, July 7 - 12, 2002.
45. I. N. GOPAL, A. QUINN, H. F. STAATS, S. C. HENRY, J. D. HAMILTON, R. FROTHINGHAM. Nasal Peptide Vaccination Elicits CD8 Responses and Protects BALB/c Mice from Challenge with Virulent Murine Cytomegalovirus. 40th Annual meeting of Infectious Diseases Society of America. October 24th to 27th, 2002 at Chicago.
46. J.W. Peacock, S. K. Nordone, S.S. Jackson, H.-X. Liao, N.L. Letvin, B. F. Haynes, and H.F. Staats. Intranasal Vaccine Subunit Priming Followed by MVA Boosting Enhances the Induction of HIV-specific IFN γ Spot-forming

Cells and Tetramer Positive T Cells in the Female Reproductive Tract. 10th Conference on Retroviruses and Opportunistic Infections (CROI) to be held February 10-14, 2003 at the Hynes Convention Center in Boston, MA.

Abstracts

47. A. Quinn, W. Jiang, H. Staats, R. Frothingham. Targeted Nasal Peptide Vaccination is Immunogenic but Not Protective Against Mycobacterial Infection. 2003 General Meeting of The American Society of Microbiology.
48. D. A. Steeber, T. Kadono, H. F. Staats, G. M. Venturi, M. C. Andrews, N. Wagner, and T. F. Tedder. Differential requirement for L-selectin- and β_2 integrin-dependent lymphocyte migration in generation of gut- and nasal-associated mucosal immune responses. 2003 American Association of Immunologists meeting, Denver, CO.
49. J. Peacock, S. Nordone, S. Jackson, H.-X. Liao, N. Letvin, A. Gomez-Yafal, L. Gritz, G. Mazzara, B. Haynes, and H. Staats. Immunization That Induces Maximal HIV-Specific Cell-Mediated Immunity In The Reproductive Tract And Colon Of Female Mice Is Not Optimal In Male Mice. 2003 American Association of Immunologists meeting, Denver, CO.
50. J. Peacock, H.-X. Liao, N. Letvin, S. Jackson, H. Staats and B. Haynes. Gender and Prime-Boost Immunization Regimen Both Determine HIV Envelope Subunit Immunogenicity in Murine Systemic and Mucosal Sites. Presented at AIDS Vaccine 2003, New York, NY.
51. S. K. Nordone and H. F. Staats. Capric Acid and Hydroxypropylmethylcellulose Enhance the Immunogenicity of a Nasally Administered HIV Vaccine. Presented at AIDS Vaccine 2003, New York, NY.
52. H. F. Staats. Serum IgG and Vaginal IgA Induced by Subcutaneous or Nasal Immunization Recognize Distinct Epitopes in HIV-1 gp41. Presented at AIDS Vaccine 2003, New York, N.Y.
53. J. W. Peacock, S. S. Jackson, H.-X. Liao, N. L. Letvin, A. Gomez Yafal, L. Gritz, G. P. Mazzara, B. F. Haynes and H. F. Staats. Route of immunization as a determinant of optimal induction of HIV-1 specific lymphocytes in the female reproductive tract. Presented at the FASEB meeting as a late breaker poster, April 2004, Washington, DC.
54. H. F. Staats. Effective adjuvant activity for nasally-administered vaccines in the absence of an adjuvant-responsive epithelium. Presented at the Modern Vaccine/Adjuvant Formulation. Radisson SAS Hotel, Prague, Czech Republic 15-17 September 2004.
55. J. B. McLachlan, H. F. Staats, J. P. Hart, S. V. Pizzo, C. P. Shelburne, R. Goyal and S. N. Abraham. A mast cell activator with potent mucosal and systemic vaccine adjuvant activity when delivered intranasally. Presented at the Modern Vaccine/Adjuvant Formulation. Radisson SAS Hotel, Prague, Czech Republic 15-17 September 2004.
56. H. F. Staats, M. Alam, R. Searce and B. F. Haynes. Inhibition of protective lethal toxin passive immunotherapy by antibody antagonism. Presented at the SERCEB Annual Meeting, Oct. 20-22, 2004.
57. H. F. Staats, M. Alam, R. Searce and B. F. Haynes. Antibody Inhibition of protective immunotherapy. Presented at the 2nd Annual RCE Meeting, March 13-15, 2005, Galveston, TX.
58. D. W. Pascual, H. Staats, D. Mierzejewska, T. Hoyt, A. Robinson, K. Fujihashi, and M. Maddaloni. Mucosal vaccine targeting circumvents the use of adjuvant for development of mucosal immunity to botulinum neurotoxin A (BoNT/A). 2005. 12th International Congress of Mucosal Immunology, #53587.
59. J. M. Thompson, H. F. Staats, and R. E. Johnston. Systemic and Mucosal Adjuvant Activity of Venezuelan Equine Encephalitis Virus Replicon Particles. Presented at the American Society for Virology Annual Meeting, 18-22 June 2005 - Penn State University, University Park, PA.
60. J.-S. Yu, J. W. Peacock, S. Vanleeuwen, W. R. Jacobs, Jr., R. Frothingham, H. Staats, H.-X. Liao, and B. F. Haynes. Generation of Mucosal Cell Responses by Recombinant *Mycobacteria* Vectors. Presented as a poster at the SERCEB Annual Meeting - October 9-11, 2005 in Chapel Hill, NC.
61. H. F. Staats, S. M. Kirwan, M. Alam, R. Searce and B. F. Haynes. Neutralization of anthrax lethal toxin in vitro by anti-PA and anti-LF monoclonal antibodies. Presented as a poster at the SERCEB Annual Meeting - October 9-11, 2005 in Chapel Hill, NC.
62. L. Pons, A.D. Buchanan, P.H. Steele, H.F. Staats and A.W. Burks. CD4+CD25^{high} T Regulatory Cells in Egg-Allergic Children Undergoing Oral Desensitization. Journal of Allergy and Clinical Immunology, Volume 117, Issue 2, Supplement 1, February 2006, Page S42.
63. N.A. Paraggio, A. McGowen, A. E. Sobel, S.M. Kirwan, C. P. Shelburne, S.V. Pizzo, S.N. Abraham and H. F. Staats. Mast cell activators are potent adjuvants for mucosal and systemic anthrax vaccines. To be presented as a poster at the ASM Biodefense Research Meeting; February 16-18, 2007.

TEACHING
(Supplemental Form)

Formal Scheduled Classes

Date	Course	Contribution
1998 - Present:	Duke University <i>Immunology 291</i>	2 lectures/course on mucosal immunology
2000 - Present:	Duke University <i>Pathology 385</i>	1-2 lecture/course on vaccine immunology
2005 – Present:	Duke University School of Medicine, <i>Body and Disease Course</i>	1 lecture on Bioterrorism and Emerging Infections

Graduate School Courses DUMC

1998 - Present: Lecturer, Duke University *Immunology 291*
2000 - Present: Lecturer, Duke University *Pathology 385*

Other teaching Laboratory instruction in mucosal immunology/vaccine research.

Summary of Teaching Hours

- 3-4 hours per year classroom lectures
- 10 hours per year thesis committee participation
- Up to 20 hours per week laboratory instruction